

TITLE 410 INDIANA STATE DEPARTMENT OF HEALTH

LSA Document #12-157

SUMMARY/RESPONSE TO COMMENTS FROM THE PUBLIC HEARING

The Indiana State Department of Health's (ISDH) Executive Board preliminarily adopted Rule 410 IAC 6-8.3, Residential Onsite Sewage Systems, on May 9, 2012. ISDH published the proposed rule in the April 4, 2012, Indiana Register. A public hearing was held in Indianapolis on July 16, 2012, to solicit comments from the public on the proposed rule. The record of the hearing was held open for submission of written comments, until July 20, 2012. The following parties made comments during the public hearing or submitted written comments:

Randy Staley, private soil science consultant

Amber Willen, private soil science consultant

William D. Hosteter, private soil science consultant, Hosteter Soil Consulting

Douglas J. Baer, Environmental and Preparedness Supervisor, Dearborn County Health Department

Gary Chapple, REHS, Pollution Control Director, Fort Wayne - Allen County Department of Health

Gary Hudson, private soil science consultant

Gary Koteskey, Sim/Tech Filter

Gary C. Steinhardt, Professor of Agronomy, Purdue University

Jason LeMaster, Director of Environmental Health, Hamilton County Health Department

John Bonsett, Director, Environmental Health, Johnson County Health Department

Joshua S. Williams, Administrator, Delaware County Health Department

Kristina Sommers, Tipton County Health Department

Jason Churchill, Government Relations Representative, Orenco Systems, Inc.

Patrick Mulhall, Vice President, Sales, Polylok, Inc. & Zabel Environmental, Inc.

Theo B. Terry, III, RS, President/CEO, Bear Onsite, LLC

Timothy J. Haas, PE, James H. Maurer, PE, Haas & Associates, LLC

Elizabeth K. Cierzniak, Partner, Faegre Baker Daniels LLP

The following is a summary of the comments received and ISDH's responses thereto:

General Comments:

Comment by Gary Chapple: He recommends an outline type format where points (1), (2), etc. are indented so they are not right below (b), (c) to make it easier to read and find sections.

Response: No Change. The formatting is dictated by LSA.

Comment by Timothy J. Haas, PE and James H. Maurer, PE: They question if there are any changes being considered for the Advanced Enviro-Septic Wastewater System regulations.

Response: No change. The Advanced Enviro-Septic Wastewater System is covered by a standard outside of the rule. No change is being contemplated for this system.

Comment by Timothy J. Haas, PE and James H. Maurer, PE: Their comments were pertinent to the issues faced by communities bordering Lake Michigan. They requested clarification of rules concerning setbacks from lakes that are a public water supply source and the clarification of the normal high water mark of Lake Michigan. They also expressed concerns about the degradation of dunes areas by wave action from Lake Michigan and the effect that would have on properties served by onsite sewage systems due to erosion issues. They requested that special consideration be given in the rule to that area of the state.

Response: Separation distances in section 61 have been changed to include "lake" in the separation distances for public water supplies.

As to the other comments provided, they pertain to issues which affect only 3 counties, and are therefore very limited in scope. The department staff is working with local officials to address those issues through means outside the scope of a state-wide rule (such as IDNR requirements and local ordinances).

Comments by Section:

Section 48(b) and Section 50:

Comment by Gary Chapple: Comments that unless the department delegated a commercial project to the county, the county would not be able to issue a construction permit. He states that the county needs to be able to issue a construction permit for all commercial systems.

Response: A statement has been added that the rule does not prevent local ordinance from requiring permits for commercial onsite sewage systems approved by the department, with the stipulation that the permit issued by the local health department shall not be in conflict with the conditions of the permit issued by the department.

Section 54:

Comment by Gary Chapple: He states that a similar issue exists with operating permits as to what he commented on for construction permits.

Response: A statement has been added that the rule does not prevent local ordinances from requiring operating permits for commercial onsite sewage systems, with the stipulation that the operating permit issued by the county shall not be in conflict with the permit issued by the department.

Comment by Elizabeth K. Cierzniak: Ms. Cierzniak made comment on behalf of the State Alliance of Indiana YMCAs. She states that she has serious concerns about the new language in Section 54 that authorizes the State Department of Health to issue and revoke operating permits for commercial onsite sewage systems. She has not found any ascertainable standards or procedures governing the initial issuance or subsequent renewal of an operating permit. She also questions whether the Department even has the statutory authority to impose an operating permit requirement on commercial onsite systems. She makes reference here to IC 16-19-3-27, which applies only to operating permits for residential onsite systems. She states that the legislature would have included commercial onsite sewage systems in IC 16-19-3-27 if they had wanted to require operating permits for commercial onsite sewage systems. She takes issue with the fact that although the proposed rule requires operating permits for commercial onsite sewage systems, and includes procedures for denying or revoking an operating permit, there is no guidance as to when an operating permit is required or procedures to govern the issuance of such permits. She is also concerned that the issuance of operating permits is not linked to the issuance of construction permits, therefore giving the department the authority to require operating permits of existing systems.

She states the YMCAs understand the need for an effective regulatory scheme governing commercial onsite systems that includes enforcement tools such as operating permits. Responsible stewardship of our natural environment is a core principle of the YMCA Movement. However, the Proposed Rule subjects owners of commercial onsite systems to potentially burdensome new regulatory requirements without clear statutory authority and without setting forth any standards or procedures for the imposition of these requirements. In light of these concerns, they request that the language concerning operating permits be stricken from the Proposed Rule.

She thanked us for considering these comments.

Response: No change. The department derives the authority to regulate onsite sewage systems from IC 16-19-3-4, which states that, “(a) The executive board may, by an affirmative vote of a majority of its members, adopt reasonable rules on behalf of the state department to protect or to improve the public health in Indiana. (b) The rules may concern but are not limited to the following: (1) Nuisances dangerous to public health. (2) The pollution of any water supply other than where jurisdiction is in the water pollution control board and department of environmental management. (3) The disposition of excremental and sewage matter....” Therefore, the executive board may adopt rules which include not only the design and installation of any onsite sewage system, but also the operation and maintenance of those systems while they are in use for

accepting and treating “excremental and sewage matter”. This applies to both residential and commercial onsite sewage systems.

The general assembly did pass legislation in 2002 concerning the issuance of operating permits for residential onsite sewage systems. Due to the high numbers of residential onsite sewage systems, and the effects on individual families, these systems typically receive much more attention than commercial onsite sewage systems. It would not be appropriate to assume that the members of the legislature would not also believe that operating permits for commercial onsite sewage systems should also be required. In fact, if the members of the legislature were cognizant of the size and complexity of many of the commercial onsite sewage systems, they may have included commercial onsite sewage systems in the 2002 legislation. In fact, the legislation passed in 2002 requires the department to exercise its authority found in IC16-19-3.

As mentioned, the size and complexity of some of the commercial onsite sewage systems makes the issuance of operating permits for these systems even more critical than for many of the residential onsite sewage systems. The diversity of technologies makes it difficult to address all of the operating and maintenance requirements in a succinct manner. Therefore the requirements of the proposed commercial rule mirrors the requirements of the residential rule.

Finally, the department has been requiring operating permits as a condition of approval for the more complex commercial onsite sewage systems for quite some years, so this is not a change in procedure, and owners of these systems are typically understanding of the need for such maintenance. The department plans are to continue to develop this, but in the foreseeable future it would apply only to the larger, more complex systems, and not to the conventional commercial onsite sewage systems.

Section 61:

Comment by Joshua Williams: He didn’t see any requirement for separation distance between the onsite sewage system and geothermal systems or loops.

Response: Language has been added to the Separation Distance table in Section 61 to reflect minimum separation distances to geothermal loops or systems. This is important as the use of geothermal systems becomes more common.

Comment by Timothy J. Haas, PE and James H. Maurer, PE: 1. In Section 410 IAC 6-8.2-56 Separation distance; does the item entitled “public water supply well or reservoir” apply to Lake Michigan? Lake Michigan serves at the source of drinking water for many Indiana communities. 2. Also, in Section 410 IAC 6-8.2-56 Separation distance; how does the item entitled “other pond, retention pond, lake or reservoir” and the sub-note 2 “measured from normal high water mark” apply to the Lake Michigan beach which changes in elevation (6’ change from high to low since 1918) and water’s edge location frequently due to heavy wind and wave actions (20’ waves)?

Response: Separation distances in section 61 have been changed to include “lake” in the separation distances for public water supplies. The historical high water mark for Lake Michigan used by the department is 581.5 feet IGLD 1985 (International Great Lakes Datum). For consistency between rules, this change was also applied to 410 IAC 6-10.1.

Section 63:

Comment by Randy Staley: He states that the subsurface drain trench should be installed 6 to 8 inches into the massive clay, glacial till, or fragipan, not the 2 inches required by the current rule. This is to be sure and seal off any extraneous water from entering the site. He also expresses his opinion that the state should permit pumping the drainage water, rather than requiring only gravity flow drains. This would permit the drains to go in deeper.

Response: No change. Mr. Staley makes a number of pertinent comments concerning drainage of soil absorption field sites. However, input from local health departments and installers do not support his recommendations concerning the need to install subsurface drains any deeper or any further into the “limiting layer” at the site than what the state rule has required since 1990.

Comment by John Bonsett: He states that he is opposed to pumping the drainage water from perimeter drains for new construction.

Response: No change. As to the use of pumps to move drainage water – this may be a consideration once there are operation and maintenance programs in place throughout the state which mandate the periodicity of verification of pump operation. But until that time, leaving that to the business owner is not a wise idea. Most business owners will not recognize the urgency of the matter and will not periodically check pump operation. When the pump goes down and is not replaced or repaired, groundwater will flood the soil absorption field, resulting in failure of the soil absorption field. Replacing or repairing the pump after this has happened may alleviate the failure for a time, but permanent damage may have been done to the soil absorption field, thus shortening its overall lifespan.

Section 64:

Note: there were numerous comments concerning the change in 410 IAC 6-8.3 to require that all on-site soils evaluations be conducted by a registered soil scientist for residential onsite sewage systems. Since 1988, 410 IAC 6-10-6, *Commercial On-site Wastewater Disposal*, has required that on-site soils evaluations for commercial systems be conducted by a registered soil scientist. This has never been an issue for commercial systems; therefore, there is no reason to consider a change.

Section 68:

Comment by Doug Baer: He agrees with the wording for the water softener backwash, but questions if it is the right section (he states he doesn’t know which section it should be in).

Response: No change. Department staff determined that this is the best location for this requirement.

Comment by Jason LeMaster: He states that he likes the two tank requirement when wastewater is pumped into septic tank, but he poses this question: Does this also include the grinder pumps that are in basements where pump volume may be ~20 gallons or less? He believes the answer should be yes. He also states that the Presby systems should have outlet filters in the septic tank if a grinder pump is used to pump sewage into the septic tank.

Response: No change. The proposed wording already includes situations where the volume is less than 20 gallons, as one of the primary issues is that a grinder pump pulverizes the solids which are detrimental to the settling process in the septic tank. This issue remains, even for lower volumes.

Presby systems are addressed in a separate department standard, not in this rule. Therefore, the comment referencing Presby systems can be handled through that standard.

Section 69:

Comment by Doug Baer: He asks: “If all new tanks are to be outfitted with an outlet filter, does the Presby manual supersede this proposed rule. Also, does this eliminate the possibility of external outlet filters? Then in the next line it says if not provided. What’s up with that?”

Response: No change. This applies to new tanks. There would be no instances where an external outlet filter would be necessary, or even preferred, when a new tank is being installed. Presby systems are addressed in a separate department standard, not in this rule. Therefore, the comment referencing Presby systems can be handled through that standard. There are times when a septic tank outlet filter is not required, such as when a tank discharges to another tank, or to a secondary treatment unit. These tanks do not need a septic tank outlet filter, but they do need to have appropriate baffles in place. Section 72(c)(4) allows for an external outlet filter on repairs.

Section 72:

Comment by Gary Koteskey: He asks: If a form of filtration is provided in the dosing tank, such as a pressure filter, vault screen, pump screen, etc. is a septic tank filter still mandatory? (On a pressure system, while a septic tank filter is still helpful, the best place for filtration is at the outlet of the dosing chamber.) He then states that NSF standard 46 is designed for slotted filters, an alternate method of approval should be allowed for filters that are not of a slotted screen design. He reiterates others comments that the current listed NSF 46 approved filters have only been tested for solids larger than 1/8” in diameter. Further, he points out that the rule requires 120 lineal feet of filtration when there are existing filters and future filters that cannot be rated for lineal feet because they do not use slots for filtration. He also has concern that filters will function without a bypass of unfiltered wastewater, sludge or scum during normal use and cleaning or exchange. He states that perhaps there should be a requirement that flow can be shut off at the filter or the outlet during service. And finally, he questions the intent of subsection (h)(1), which states that the outlet filter and their cartridges remain in service for the life of the septic tank. He wants to know if the filter must last the life of the tank, or just that a filter must be in the tank for the life of the tank.

Comment by Jason Churchill: He states that the proposed rule would require effluent filters that prevent the passage of solids larger than 1/16 inch. That requirement would prohibit the use of effluent filters with 1/8 inch openings. He questions the grounds for excluding effluent filters with 1/8-inch openings. Moreover, he note that the NSF/ANSI Standard 46 testing and product certification protocol recognizes effluent filters with 1/8-inch openings (either 1/16-inch or 1/8-inch polystyrene beads may be used for test, at the manufacturer’s discretion).

Comment by Theo Terry: He supports the requirement for NSF Standard 46 certification but states that the level of filtration should be 1/8th, as allowed by NSF, not the 1/16th stated in the proposed rule. He also states that he has concerns about the development of the requirements for 120 lineal footage and 45 in² total open area requirements for the filters. He provides some suggested language that will allow every major effluent filter to be able to compete in the state (except for one) once they have obtained NSF certification. If you change the requirement to a six-inch case diameter from the eight-inch diameter, it will allow all major manufacturers to be able to sell filters in the state. This is a rule then that does not benefit one company over another. Plus it also encourages innovation by having a performance incentive imbedded in the rule that allows companies to by-pass the prescriptive requirement of either 6 or 8-inch diameter once they have proven themselves in an NSF Field Performance test.

Response: The language has been changed to allow for 1/8th inch filtration as tested for in NSF/ANSI Standard 46. The stipulations concerning the 45 square inches and 120 lineal feet of filtration area have been removed. This section of the rule now mirrors the NSF/ANSI Standard 46, without the additional technical requirements. This addresses the primary concerns of each of the three commenters, while still allowing for acceptable, if not optimal, requirements for septic tank outlet filters.

Also, the wording in subsection (h) has been revised to address Mr. Kotesky's comment about the filter remaining in place for the life of the septic tank.

The pressure filter, vault screen, pump screen, etc, referred to by Mr. Kotesky are independent filters or screens, independent of the septic tank outlet filter. Each serves a purpose, and can be used, but department staff has determined that the septic tank outlet filter is the most cost-effective device of all those he lists.

Section 74:

Comment by Doug Baer: He states that the word dimension should be plural in his opinion. Distribution boxes are measured in both width and length. Dimension (singularly) could be construed as long as it meets one area at 12".

Response: No change. This section applies to the "minimum interior dimension of a distribution box shall be 12 inches". The use of the singular is appropriate here, as it means that at least one of the interior dimensions must be no less than 12 inches.

Sections 78 and 80:

Comment by Randy Staley: In his testimony, Mr. Staley questions the use of effervescence of a soil layer in a Wisconsin till soil as indicating permeability which is too slow for suitability for a soil absorption field. He states that he has seen situations in the field which cause him to question this requirement in the rule, because water is moving through those layers. He recommends that the language in the rule be modified so that this layer is not too slowly permeable for a soil absorption field if the soil scientist observes moisture and roots in the soil layer which is effervescent. He also stated that there are other soil scientists who agree with him on this topic.

He also questions the different loading rates in the Soil Loading Rate table versus the Soil Loading Rate table for Elevated Sand Mound systems. He recommends that we take a closer look at the soil loading rates used by other states in the Midwest. He also recommends that we change the soil loading rates for prismatic structure back to what they were in 410 IAC 6-8.1.

He stated concerns over the soil loading charts and the terminology used in the drainage section for massive clay horizons. In the soil loading rate charts, there is a soil loading rate assigned to certain types of massive clay but not to others - but the drainage section has no differentiation between the two types of massive clay.

Comment by Gary Hudson: Mr. Hudson recommends adding the statement "unless the compaction is broken up by a method approved by the department" to the end of Section 69 (c) (5) (Where compacted soil material is indentified in the soil to a depth greater than twelve (12) inches); Changing the percent clay from 27 to 20 percent, and the percent coarse fragments from 50 to 60 percent, in all sections of the rule pertaining to coarse fragments; Moving natural platy structure back to the same column as granular structure in the loading rate chart; and that the loading rates for prismatic structure should be returned to the rates assigned in 6-8.1.

Comment by William Hosteter: His comments basically support Randy Staley concerning Wisconsin Glacial Till considerations. He provides some detailed comments that shows the complexity of the issue.

Comment by Amber Willen: She states that she agrees with what Randy Staley wrote.

Comment by Gary C. Steinhardt: He states that Randy Staley has addressed a number of issues that could be improvements. He states that the issue of calcareous Wisconsin age glacial till and the effect that it has on loading rate is a complex one. He cites soils morphology in various parts of the state and how it affects onsite sewage system selection and performance. Some of the Wisconsin age glacial tills may be conducive to satisfactory onsite sewage system performance and some Wisconsin age glacial tills should never be approved for onsite sewage systems. He states that approval of those sites that may be conducive to satisfactory onsite sewage systems should only be done on a case by case basis and then only in consultation between the soil scientist involved, the local health department and ideally the State Department of Health. He reiterates that this is one of the most vexing issues that we face and that further research is needed to guide soil scientists, local health departments and the State Department of Health. Without the critical studies, local health departments are not going to be able to provide the public with the ability to install onsite systems where they are appropriate and protect the public by refusing approval where they do not fit.

Comment by John Bonsett: He stated that he shares similar concerns with Randy Staley concerning the issue of permeability of calcareous till in Wisconsin till soils.

Response: The Soil Loading Rate Tables have been changed as they relate to prismatic soil structure, so that the prismatic structure listings are in the same columns as in former 410 IAC 6-8.1.

The sections containing the requirements concerning the identification of soil horizons developed from Wisconsin glacial till that effervesce with dilute hydrochloric acid have been

modified to include language that if the soil scientist provides documentation using a method acceptable to the department, the required vertical separation distance will not be applied.

Mr. Staley provides appropriate comments to the effect that not all of these soil horizons are too slowly permeable to require the vertical separation distance required by the proposed rule requirements. However, his recommendation that the determination be based on soil moisture and the presence of roots are not determinations that can be easily or properly made in the field. The rule requires that NRCS guidelines be used to describe soils. There are no guidelines published by NRCS for describing soil moisture as a means of classifying soils. Therefore, there is no standard for doing this. NRCS guidelines do include methods of describing root penetration in soil horizons. However, the way that the roots penetrate the horizons, the number of roots and sometimes even the shapes of the roots must be determined in order to begin to understand what root penetration means in terms of soil permeability. Most soils evaluations are done using push probes or bucket augers. With this method of soils evaluations, none of the necessary descriptions concerning the roots can be ascertained, making this type of attempted evaluation worthless.

Purdue University, in one of its publications, states that “The presence of free carbonates is generally associated with unweathered, or slightly weathered, parent material. Often the glacial till at or a few cm below the uppermost carbonates in the profile is dense and acts as a limiting layer for plant roots and movement of water and effluent. Thus the presence of carbonates in till-derived soils often is a sign of slower permeability.” (D.P. Franzmeier, G.C. Steinhardt, D.G. Schulze, Indiana Soil and Landscape Evaluation Manual, Version 1.0, Purdue University, January, 2004) It is the presence of the free carbonates in the soil that reacts with the dilute hydrochloric acid that is the basis for the test for reduced permeability.

After receipt of the comments submitted on this topic, Mike Mettler and Alan Dunn, staff members of the Environmental Public Health Department, ISDH, interviewed Dr. Gary Steinhardt, PhD., Professor, Department of Agronomy, Purdue University, concerning this matter. Doctor Steinhardt is in agreement that this is an issue that was appropriately raised and must be addressed. However, he is of the opinion that we must work together (the department, Purdue, and soil scientists) to determine a methodology to differentiate the different calcareous horizons and where the break in permeability classification should be. He stated that this is a complex issue, both from geographical and morphological standpoints, and that the department is wise in taking a conservative stand on this until the issue of differentiation of these horizons has been resolved.

The department is in agreement with Doctor Steinhardt, therefore the insertion of the language that would permit additional methodology to be considered.

Mr. Staley’s comment concerning the differentiation between the two types of massive clay in the soil loading rate table but not in the drainage section has been resolved by clarification in the drainage section.

Finally, there are numerous studies and published papers that state that natural platy structure is not as permeable as granular structure. Therefore, this requested change has not been made.

For consistency between rules, these changes were also applied to 410 IAC 6-10.1, although some comments reference the sections of 410 IAC 6-8.3.

Section 82:

Comment by Kristina Sommers: She states that the effluent pipe parameter for 6” pipe is not in the proposed version of the law.

Response: No change. The proposed rules state that the effluent sewers shall have a minimum diameter of four inches. Therefore, six inch pipe is acceptable.

Section 83:

Comment by Kristina Sommers: She states that the proposed rule still states that there must be five feet of unperforated pipe between the D-box and the trench. She wants clarification that this also means that there must be a five foot separation from the d-box to each trench.

Response: The proposed rule has been changed to reflect that there shall be a distance of at least 5 feet from the distribution box to each trench. The provision for the unperforated pipe between the d-box and the trench will remain.

Section 92:

Comment by Kristina Sommers: She is concerned that the rule does not specific what a “sufficient sample” is.

Response: No change. This refers to the amount of soil that is necessary to conduct the “ribbon test” in the field to see if soils are too wet for installation of a soil absorption field. This is typically handled through training and is not a difficult determination to make.

Section 98:

Comment by Gary Chapple: He recommends that flowable fill be added as a method to fill in an abandoned septic tank in situations where the tank cannot be crushed due to location. He also recommends that the rule require the removal of risers such as distribution box and inspection ports from above the surface.

Response: Wording has been added to allow for the use of flowable fill in situations where the septic tank cannot be crushed, for the removal of risers for distribution boxes and for the removal of inspection ports. The removal of these items will be easy and inexpensive. The use of flowable fill may not be as inexpensive as other fill materials but may, on rare occasions, be necessary.